

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A positive active material for rechargeable lithium batteries, the positive active material comprising:

an active material component processed from a manganese-based compound, the manganese-based compound being selected from the group consisting of Li_xMnF_2 , Li_xMnS_2 , $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_2$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{F}_z$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{S}_z$, $\text{Li}_x\text{Mn}_2\text{F}_4$, $\text{Li}_x\text{Mn}_2\text{S}_4$, $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{F}_z$, and $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{S}_z$, where $0 < x < 1.5$, $0.05 \leq y \leq 0.3$, $z \leq 1.0$ and M is selected from the group consisting of Al, Co, Cr, Mg, Fe and La; and

a metallic oxide coated on the active material component, the metallic oxide comprising a metal selected from the group consisting of Mg, Al, ~~Co~~, K, Na, Ca, Ti and Sr.

2. (Previously Presented) The positive active material of claim 1 wherein the metallic oxide has a metal selected from the group consisting of Mg, Ti and Al.

3. (Previously Presented) The positive active material of claim 1 wherein the oxide has a thickness range of 1–1000nm.

4. (Previously Presented) The positive active material of claim 1 wherein the quantity of metal content is a range of 1 to 10 weight percent of the oxide.

5. (Currently Amended) A method of preparing a positive active material for rechargeable lithium batteries, the method comprising the steps of:

obtaining a powder from a source material, the source material being selected from the group consisting of Li_xMnO_2 , Li_xMnF_2 , Li_xMnS_2 , $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_2$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{F}_z$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{S}_z$, $\text{Li}_x\text{Mn}_2\text{O}_4$, $\text{Li}_x\text{Mn}_2\text{F}_4$, $\text{Li}_x\text{Mn}_2\text{S}_4$, $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_4$, $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{F}_z$, and $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{S}_z$, where $0 < x < 1.5$, $0.05 \leq y \leq 0.3$, $z \leq 1.0$ and M is selected from the group consisting of Al, Co, Cr, Mg, Fe and La; and

coating the powder with a metallic alkoxide solution to make an alkoxide-coated powder, the metallic alkoxide solution being selected from the group consisting of Mg-alkoxide, Al-alkoxide, ~~Co-alkoxide~~, K-alkoxide, Na-alkoxide, Ca-alkoxide, Ti-alkoxide and Sr-alkoxide; and

heat-treating the alkoxide-coated powder such that the alkoxide-coated powder is changed into an oxide-coated powder.

6. (Previously Presented) The method of claim 5 wherein the alkoxide solution is selected from the group consisting of Mg-alkoxide, Ti-alkoxide and Al-alkoxide.

7. (Previously Presented) The method of claim 5 wherein the alkoxide solution contains 1 to 50 weight percent of the metal.

8. (Previously Presented) The method of claim 5 wherein the heat-treating step is performed at a temperature range of 200 to 1000°C for 1 to 20 hours.

9. (Currently Amended) A positive electrode for rechargeable lithium batteries, the positive electrode comprising:

a plurality of active material particles processed from a manganese-based compound, the manganese-based compound being selected from the group consisting of Li_xMnO_2 , Li_xMnF_2 , Li_xMnS_2 , $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_2$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{F}_z$, $\text{Li}_x\text{Mn}_{1-y}\text{M}_y\text{O}_{2-z}\text{S}_z$, $\text{Li}_x\text{Mn}_2\text{O}_4$, $\text{Li}_x\text{Mn}_2\text{F}_4$, $\text{Li}_x\text{Mn}_2\text{S}_4$, $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_4$, $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{F}_z$, and $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_{4-z}\text{S}_z$, where $0 < x < 1.5$, $0.05 \leq y \leq 0.3$, $z \leq 1.0$ and M is selected from the group consisting of Al, Co, Cr, Mg, Fe and La, and a metallic oxide coated on each of the active material particles, the metallic oxide comprising a metal selected from the group consisting of Mg, Al, ~~Co~~, K, Na, Ca, Ti and Sr;

wherein the positive electrode comprises the active material particles coated with the metallic oxide, and wherein the positive electrode is formed after the active material particles are coated with the metallic oxide.

10. (Previously Presented) The positive electrode of claim 9 wherein the metallic oxide has a metal selected from the group consisting of Mg, Ti and Al.

11. (Previously Presented) The positive electrode of claim 9, wherein the oxide has a thickness range of 1 to 1000 nanometers.

12. (Previously Presented) The positive electrode of claim 9, wherein the quantity of metal content is in a range of 1 to 10 weight % of the oxide.